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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/627,421	07/27/2000	Atsushi Murashima	017446/0305q	1185
22428	7590	06/02/2005	EXAMINER	
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			AZAD, ABUL K	
			ART UNIT	PAPER NUMBER
			2654	

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/627,421

Applicant(s)

MURASHIMA, ATSUSHI

Examiner

ABUL K. AZAD

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 10-18 and 20-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-18 and 20-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This action is in response to the communication filed on January 14, 2005.
2. Claims 10-18 and 20-44 are pending in this action. Claims 10-18 and 20-29 have been amended. Claims 1-9 and 19 have been canceled. Claims 30-44 have been newly added.
3. The applicant's arguments with respect to claims 10-18 and 20-44 have been fully considered but they are not deemed to be persuasive. For examiner's response to the applicant's arguments or comments, see the detailed discussion in the Response to the Arguments section.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 10, 11, 14-18, 20-22, 25-32, 33-34 and 37-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nomura et al. (CA 2,112,145) in view of applicant's admitted prior art.

As per claim 10, Nomura teaches, "a speech signal decoding apparatus characterized by comprising":

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“a plurality of decoding means for decoding information containing at least a sound source signal, a gain, and filter coefficients from a received bit stream” (Page 5, line 17-25);

“identification means for identifying voiced speech and unvoiced speech of a speech signal using the decoded information, at least the unvoiced speech containing a background noise” (page 6, lines 11-28);

“smoothing means for performing smoothing processing based on the decoded information for at least either one of the decoded gain and the decoded filter coefficients in the speech identified by said identification means in order to provide enhanced coding quality for at least the unvoiced speech with the background noise” (Page 7, lines 1-13).

Nomura does not explicitly teach, “means for obtaining an excitation signal by multiplying the decoded sound source signal by the decoded gain after performing the smooth process and means for decoding the speech signal by deriving a filter having the decoded filter coefficients by the excitation signal obtained from the means for obtaining”. However, the applicant acknowledges that it is well-known, “means for obtaining an excitation signal by multiplying the decoded sound source signal by the decoding gain after performing the smooth process and means for decoding the speech signal by deriving a filter having the decoded filter coefficients by the excitation signal obtained from the means for obtaining” (Page 4, line 13 to page 6, line 16). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement this well-known process into Nomura’s invention because one ordinary skill

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in the art would readily recognized that would provide better perceptual quality of speech at the out put.

As per claim 11, Nomura teaches, "wherein said apparatus further comprises classification means for classifying unvoiced speech in accordance with the decoded information, and said smoothing means performs smoothing processing in accordance with a classification result of said classification means for at least either one of the decoded gain and the decoded filter coefficients in the unvoiced speech identified by said identification means" (page 11, lines 15 to page 12, line 10).

As per claim 14, Nomura teaches, "wherein said decoding means decodes information containing pitch periodicity and a power of the speech signal from the received bit stream, and said identification means performs identification operation using at least either one of the decoded pitch periodicity and the decoded power output from said decoding means" (page 7, line 26 to page 8, line 15).

As per claim 15, Nomura teaches, "wherein said decoding means decodes information containing pitch periodicity and a power of the speech signal from the received bit stream, and said classification means performs classification operation using at least either one of the decoded pitch periodicity and the decoded power output from said decoding means" (page 7, line 26 to page 8, line 15).

As per claim 16, Nomura teaches, "wherein said apparatus further comprises estimation means for estimating pitch periodicity and a power of the speech signal from the excitation signal and the decoded speech signal, and said identification means performs identification operation using at least either one of the estimated pitch

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periodicity and the estimated power output from said estimation means" (page 7, line 26 to page 8, line 15).

As per claim 17, Nomura teaches, "wherein said apparatus further comprises estimation means for estimating pitch periodicity and a power of the speech signal from the excitation signal and the decoded speech signal, and said classification means performs classification operation using at least either one of the estimated pitch periodicity and the estimated power output from said estimation means" (page 7, line 26 to page 8, line 15).

As per claim 18, Nomura teaches, "wherein said classification means classifies unvoiced speech by comparing a value obtained by the decoded filter coefficients from said decoding means with a predetermined threshold" (page 7, line 26 to page 8, line 15).

As per claims 20-22, 25-32, 33-34 and 37-44, they are interpreted and thus rejected for the same reasons set forth in the rejection of claims 10, 11, 14-18.

6. Claims 12, 13, 23, 24, 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nomura et al. (CA 2,112,145) in view of Applicant's admitted prior art as applied to claims 10 and 11, 21, 22, 33 and 34 above, and further in view of Takada (US 6,088,670).

As per claims 12, 13, 23, 24, 35 and 36, Nomura does not explicitly teach, "wherein said identification/classification means performs identification/classification operation using a value obtained by averaging for a long term a variation amount based

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on a difference between the decoded filter coefficients and their long-term average”.

However, Takada teaches, “wherein said identification/classification means performs identification/classification operation using a value obtained by averaging for a long term a variation amount based on a difference between the decoded filter coefficients and their long-term average” (col. 8, lines 13-53). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use difference between the short-term value with a long-term average value to distinguish voiced speech unvoiced speech and noise because Takada teaches his invention is to provide a voice detector which capable of accurately discriminating voiced/unvoiced frames, even when there are rapid changes in noise level (col. 2, lines 46-49).

### ***Response to Arguments***

7. The applicant argues, “the object of the reference is to reproduce a speech signal for the frame with errors (to apply the above mentioned processing to only the frame with errors), and it is completely different from the present invention which aims at an improvement of the sound quality of the background noise”.

The examiner disagrees with applicant’s above assertion because frame error could occurred based on the background noise, the functional language of improved sound quality is inherent in this invention.

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8. In response to applicant's argument that voice decoder according to Takada inputs only a speech signal itself, and an application of Takada to the decoder which cannot use a speech signal as an input is impossible, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



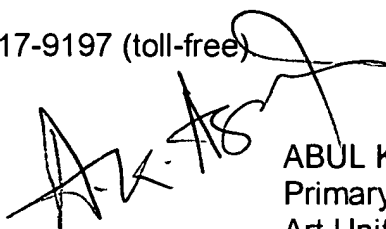
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**Contact Information**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABUL K. AZAD whose telephone number is (571) 272-7599. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHEMOND DORVIL can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'A-K-AZAD', is written over the printed name and title of the examiner.

ABUL K. AZAD  
Primary Examiner  
Art Unit 2654

May 31, 2005